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Matthias Rein

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EXAMINER

NELSON, MATTHEW M

ART UNIT

PAPER NUMBER

3732

MAIL DATE

DELIVERY MODE

07/01/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

1. Amendment filed on 4/03/2009 is acknowledged. Claims 1-20 remain pending.

Objection to the specification in regards to the abstract remains.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

4. The abstract of the disclosure is objected to because of the use of legal phraseology such as "comprises" and "said". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 3732

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 3 is vague because it is not clear what “detecting at least one property of the site of the tooth” encompasses.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-2, 4-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Buchalla et al. (2003/0022126).

10. Buchalla shows a dental hand instrument (dental handpiece 22) equipped with an illuminating device (light source 12), that may emit white light, ([0045]) for illuminating a site on a tooth (illumination would be in the form of a spotlight cone as it leaves the instrument) and a means for mixing colored light to change the color of illumination consisting of illuminants, such as a colored LED, (luminescence producing light source; [0043], [0045]) and a control unit (switch; [0045]). With respect to claim 6, a multicolored light-emitting diode (white light source; [0043]) is provided which in a first mode of operation emits white light for illumination ([0045]) and in a second mode of

Art Unit: 3732

operation emits light to which colored light has been added (luminescence producing light source; [0045]). With respect to claim 7, a filter could be utilized to achieve homogenous addition of colored light to said spotlight cone ([0045]). With respect to claim 8, luminescence of dentin produces a different color than carious regions and would therefore restrict colored light to specific locations in the spotlight cone ([0042]). With respect to claim 9, the instrument has a housing having a handpiece (dental handpiece 22) with a distal end where the spotlight cone is emitted (Fig. 1 and 2). With respect to claim 10, handpiece contains an optical fiber for guiding the light to a distal end (light guides 14; [0043]).

11. Claims 1-3, 11, 16-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Karazivan et al. (2004/0106081).

12. Karazivan shows a dental treatment center (tartar detection and removal device 10) comprising a sensor (photodetector 38), an evaluation unit (electronic system, [0046]), a control unit (actuating an indicator, [0049]), a hand instrument (instrument insert 12) equipped with an illuminating device (LEDs 62, 64) for illuminating a site on a tooth to be examined by means of a spotlight cone (light coming from distal end 36) including means for mixing colored light to said spotlight cone such as an illuminant (luminous signal, [0049]) to indicate detection of tartar where the illuminants are controlled by said control unit and the evaluations unit processes information from said sensor ([0046] - [0047]). With respect to claim 3, the hand instrument is equipped with

Art Unit: 3732

a sensor (photodetector 38) that sends an output signal (signal delivered from detector, [0047]) to a control unit (electronic system, [0046]).

13. The methods of claim 16 are rejected based on the above disclosure of Braiman. With respect to claim 17, spotlight cone remains unchanged as long as no property of the surface of the tooth to be treated is recognized since the mixing of color from the luminous signal is only triggered when a property is detected ([0049]).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 12-14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karazivan.

16. Karazivan discloses the device as previously described above and a portable casing 34 that includes the control unit, evaluation unit, and sensor ([0043]), but fails to show the control unit, evaluation unit, and sensor accommodated in said hand instrument.

17. It would have been an obvious design choice to one skilled in the art at the time of invention to modify Karazivan's hand instrument to accommodate the casing in order to further increase portability.

Art Unit: 3732

18. Claim 15, 18-20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karazivan in view of Buchalla.

19. Karazivan discloses the device as previously described above, but fails to show adding a light which is differently colored from that indicating the regions of the surface of the tooth which are still in need of treatment, adding a first color light when regions of the tooth are not in need of treatment, adding a second color light distinguishable from the first when regions of the tooth are in need of treatment, and adding colored light only to a subregion of said spotlight cone.

20. Buchalla teaches illuminating with one color for where an element is detected and another color for where no element is detected, both additional colors being added to only a subregion of said spotlight cone ([0042]). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to modify Karazivan's dental treatment center to include the multicolored light addition of Buchalla in order to better distinguish between detected and undetected areas.

Response to Arguments

21. Applicant's arguments filed 4/03/2009 have been fully considered but they are not persuasive.

22. Applicant argues that Buchalla et al. does not disclose a means for mixing colored light to a spotlight cone. The spotlight cone is simply the space between the distal end of the device and site on a tooth. Buchalla teaches in paragraphs 43, 45, as

Art Unit: 3732

stated in the original rejection, a means for mixing colored light into this spotlight cone, even if alternatively to the white light.

23. Additionally in regards to Buchalla, the examiner has taken the position that the light emitting diode is capable of producing light of a desirable wavelength or a combination of light diode (or other light means) in combination with a colored filter reads on a means for mixing colored light, since the specification does not specifically define or establish what this colored light mixing means is.

24. Applicant argues that Karazivan et al. does not disclose a means for mixing colored light to a spotlight cone. However, Karazivan teaches in paragraph 49, as stated in the original rejection, a means for mixing colored light into the spotlight cone since the luminous indicator is located on the distal end of the device directed at the spotlight cone.

Conclusion

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 3732

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew M. Nelson whose telephone number is (571) 270-5898. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris Rodriguez can be reached on (571) 272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MMN/

/Cris L. Rodriguez/

Supervisory Patent Examiner, Art Unit 3732